The Panel believes that Graduate Schools of Library and Information Science are likely to continue to provide basic masters level education for many of the individuals employed by health sciences libraries. Courses in health sciences librarianship are currently offered by 47 of the 58 graduate programs in the U.S. and Ganada.<sup>28</sup> Very few, however, have full-time faculty in health sciences librarianship.<sup>29</sup> While the number of library and information science programs has decreased in the past 10 years, the number of graduates has increased.

Graduate Programs in	oneo30
Library and Information Science <sup>30</sup>	

	1983-4	1992-3
Graduate programs	63	58
M.L.S. graduates of these programs	3,694	4,955*

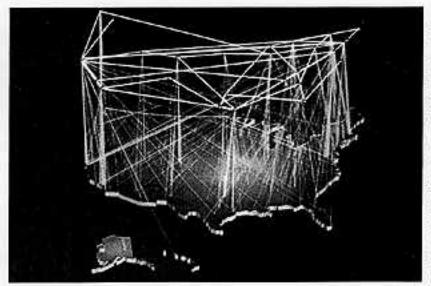
\*from 53 schools that actually reported data to ALISE for 1592-3

Health sciences librarians and their employers are concerned that the curricula of library and information science programs have not kept pace with changes in the field, especially in the area of information technologies. More library school students need to gain experience in work settings, so that they can begin to apply theory to practice.

The Medical Library Association in its Platform for Change<sup>31</sup> lists seven broad areas of knowledge and skills that health sciences librarians must have:

- Health Sciences Environment and Information Policies
- Management of Information Services
- · Health Sciences Information Services
- v Health Sciences Resource Management
- ▼ Information Systems and Technology
- Instructional Support Systems
- Research, Analysis, and Interpretation

School of library and information science faculty need additional opportunities to retool and renew their skills through additional "real world" experience, including collaboration and research with others in related fields. Collaboration with informaticians and health sciences library practitioners will also provide opportunities for more contributions to the research base of the field.



Schematic of the interconnected "backbone" networks of NSF, NASA. and DOE, together with selected elient regional and other networks. Data from September 1991. Courtesy of Donna Cox, Co-director of Scientific Communications and Media Systems. National Center for Supercomputing Applications, and Associate Director of Graphic Design. School of Art and Design, University of Illinois.

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### Recommendations

- \* Schools of library and information science should ensure that their curricula allow students to acquire the knowledge and skills they need (including those identified in Platform for Change) to prepare them to be leaders in applying new information technologies to health care.
- Schools of library and information science should create opportunities for their faculty to work in health sciences libraries and to engage in joint research projects with health information professionals of all kinds.
- ▼ The MLA and other professional associations should publicize excellent curricula of schools of library and information science (by criteria derived from Platform for Change).

# Possible Implementation Steps

By NLM:

Fund several demonstration programs at schools of library and information science to upgrade their offerings in health sciences information.

By schools of library and information science: Integrate technology, research, and medical informatics into all aspects of education for librarianship; Provide opportunities for students to receive credit for courses taken in other academic departments (for example, computer science, medical informatics, statistics);

Affiliate with health sciences libraries or institutions engaged in health informatics research to provide practical work experience for their students; and



Systematically seek the advice of practicing health sciences librarians concerning their educational needs and the effectiveness of their education and training in the practice of their profession.

By practicing health sciences librarians:

Offer preprofessional training opportunities in their libraries for students, so they can begin to apply theory to practice and participate in post-masters internship programs;

Seek doctorates in interdisciplinary programs outside the traditional domain of library science (for example, health care policy, business administration, medical economics, epidemiology, public health, and especially, medical informatics). Goal 2.2: Explore new approaches and degree programs for preparing health sciences librarians to assume new roles.

### Findings

The environment in which health sciences librarians will find themselves is complex, and it may not be enough for them to confine their preparation to library/information science courses. Coursework in other departments or schools (such as public health, social work, arts and sciences) is required by some library and information science programs. The panel has heard evidence of the curriculum of the University of Pittsburgh School of Library and Information Science, which requires interdisciplinary courses in a number of university departments.<sup>34</sup>

This is especially true at the doctoral level. Library science professionals are seeking their doctorates in interdisciplinary programs outside the traditional domain of schools of library and information science in areas such as medical informatics, health care policy, public health, medical economics, business administration, and epidemiology. In these contexts, librarians with doctoral level research and communications experience will not only make a mark, they will lead.<sup>35</sup>

During a brainstorming session, the Panel developed a comprehensive "wish list" for the curriculum of the future 36 which, if all courses were included, could extend the traditional length of graduate training far beyond the current 1-2 years. However, it provides a good description of the kinds of knowledges and skills that the panel believes are important for health sciences librarianship, and provides a "menu" from which courses could be selected.

### Recommendations

\*Universities and Schools of Library and Information Science should create new programs to prepare prospective health sciences librarians for leadership roles in the application of information technology to health care.

## Possible Implementation Steps

By schools of library and information science:

Offer three levels of training: a basic MLS degree that incorporates a core of health sciences and informatics training; a joint MLS-MS in informatics program that includes "hands on" exposure to the substantive problems central to health care informatics, including systems development experience; and a MLS degree with a doctorate in informatics requiring substantive research experience and traditional thesis defense; 37

Explore alternatives to traditional MLS courses, such as the various approaches to "distance learning" now being tried at a number of universities.

By universities and schools of public health: Develop expanded masters in public health (M.P.H.) degree programs that would include coursework in library/information science. Such programs would provide additional training for librarians with M.L.S. degrees and multidisciplinary training for those in related fields.



